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**R-F POWER AMPLIFIER PENTODE**

Filament	Thoriated Tungsten	
Voltage	10	a-c or d-c volts
Current	5	amp.
Transconductance	4000	μmhos
for plate current of 62.5 ma.		
Direct Interelectrode Capacitances:		
Grid to Plate (with external shielding)	0.15 max.	μpf
Input	17	μpf
Output	29	μpf
Overall Length	9-1/16" ± 3/16"	←
Seated Height	8-5/16" ± 3/16"	
Maximum Diameter	2-9/16"	
Bulb	T-20	
Cap	Medium	
Base	Medium Shell Giant 5-Pin Micanol, Bayonet	←
RCA Socket	Stock No.9927	

*Maximum Ratings Are Absolute Values***MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS****R-F POWER AMPLIFIER - Class B Telephony***Carrier conditions per tube for use with a max. modulation fact. of 1.0*

D-C Plate Voltage	2000 max.	volts
D-C Suppressor Voltage (Grid #3)	500 max.	volts
D-C Screen Voltage (Grid #2)	600 max.	volts
D-C Plate Current	160 max.	ma.
Plate Input	180 max.	watts
Suppressor Input	10 max.	watts
Screen Input	20 max.	watts
Plate Dissipation	125 max.	watts

**Typical Operation:**

D-C Plate Voltage	1250	1500	2000	volts
D-C Suppressor Voltage	40	40	40	volts
D-C Screen Voltage**	500	550	600	volts
D-C Grid Voltage (Grid #1)●O	-30	-35	-40	volts ←
Peak R-F Grid Voltage	90	70	55	volts
D-C Plate Current	130	110	80	ma.
D-C Screen Current	33	30	20	ma.
D-C Grid Current	8	5	3	approx.ma.
Driving Power*	4.5	3.0	1.5	approx.watts
Power Output	52	53	53	approx.watts

\* At crest of a-f cycle with modulation factor of 1.0.

O For a-c filament supply.

● obtained from a fixed supply or from suitably by-passed cathode resistor. ←

**SUPPRESSOR-MODULATED R-F POWER AMPLIFIER - Class C Telephony***Carrier conditions per tube for use with a max. modulation fact. of 1.0*

D-C Plate Voltage	2000 max.	volts
D-C Screen Voltage (Grid #2)	600 max.	volts
D-C Grid Voltage (Grid #1)	-500 max.	volts
D-C Plate Current	110 max.	ma.
D-C Grid Current	50 max.	ma.
Plate Input	180 max.	watts
Screen Input	30 max.	watts

← Indicates a change. \*\* : See end of tabulation.

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# R-F POWER AMPLIFIER PENTODE

(continued from preceding page)

Plate Dissipation				125 max.	watts
Typical Operation:					
D-C Plate Voltage	1250	1500	2000		volts
D-C Suppressor Voltage	-70	-90	-110		volts
D-C Screen Voltage <sup>Δ</sup>	13000	17000	35000		ohms
D-C Grid Voltage <sup>□</sup>	-110	-100	-100		volts
	5000	5000	7000		ohms
Peak A-F Suppressor Volt.	110	130	150		volts
Peak R-F Grid Voltage	200	190	170		volts
D-C Plate Current	100	100	80		ma.
D-C Screen Current	70	70	48		ma.
D-C Grid Current	22	20	15		approx.ma.
Driving Power	4	3.5	2.5		approx.watts
Power Output	40	50	53		approx.watts

<sup>Δ</sup> Voltage taken from unmodulated plate-voltage supply through resistor.

<sup>□</sup> From fixed supply, grid resistor (5000, 5000, 7000), or cathode resistor.

## GRID-MODULATED R-F POWER AMPLIFIER - Class C Telephony

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage				2000 max.	volts
D-C Suppressor Voltage (Grid #3)				500 max.	volts
D-C Screen Voltage (Grid #2)				600 max.	volts
D-C Grid Voltage (Grid #1)				-500 max.	volts
D-C Plate Current				160 max.	ma.
Plate Input				180 max.	watts
Suppressor Input				10 max.	watts
Screen Input				20 max.	watts
Plate Dissipation				125 max.	watts

Typical Operation:					
D-C Plate Voltage	1250	1500	2000		volts
D-C Suppressor Voltage	40	40	40		volts
D-C Screen Voltage**	500	550	600		volts
D-C Grid Voltage	-100	-90	-80		volts
Peak R-F Grid Voltage	160	130	100		volts
Peak A-F Grid Voltage	75	65	50		volts
D-C Plate Current	130	110	80		ma.
D-C Screen Current	30	25	20		ma.
D-C Grid Current	8	6	4		approx.ma.
Driving Power*	4	3	2		approx.watts
Power Output	52	53	53		approx.watts

\* At crest of a-f cycle with modulation factor of 1.0.

## PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony

### Pentode Connection

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage				1600 max.	volts
D-C Suppressor Voltage (Grid #3)				500 max.	volts
D-C Screen Voltage (Grid #2)				500 max.	volts
D-C Grid Voltage (Grid #1)				-500 max.	volts
D-C Plate Current				160 max.	ma.
D-C Grid Current				50 max.	ma.

\*\* See end of tabulation. ◀ Indicates a change.



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**R-F POWER AMPLIFIER PENTODE**

(continued from preceding page)

Plate Input	250 max.	watts
Suppressor Input	10 max.	watts
Screen Input	20 max.	watts
Plate Dissipation	85 max.	watts
Typical Operation:		
D-C Plate Voltage	1250 1600	volts
D-C Suppressor Voltage	100 100	volts
D-C Screen Voltage #	{ 18000 27000	ohms
	{ 350 400	volts
D-C Grid Voltage ▲	{ -80 -80	volts
	{ 4000 4000	ohms
Peak R-F Grid Voltage	200 190	volts
D-C Plate Current	150 150	ma.
D-C Screen Current	50 45	ma.
D-C Grid Current	30 25	approx.ma.
Driving Power	6 5	approx.watts
Power Output	120 155	approx.watts

# From modulated fixed supply or modulated plate-voltage supply through resistor.

**PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony***Tetrode Connection - Grids #2 & #3 tied together**Carrier conditions per tube for use with a max. modulation fact. of 1.0*

D-C Plate Voltage	1600 max.	volts
D-C Screen Voltage (Grids #2 & #3)	500 max.	volts
D-C Grid Voltage (Grid #1)	-500 max.	volts
D-C Plate Current	160 max.	ma.
D-C Grid Current	50 max.	ma.
Plate Input	250 max.	watts
Screen Input	30 max.	watts
Plate Dissipation	85 max.	watts
Typical Operation:		
D-C Plate Voltage	1250 1600	volts
D-C Screen Voltage ##	{ 15000 20000	ohms
	{ 130 130	volts
D-C Grid Voltage ▲	{ -180 -180	volts
	{ 4000 4000	ohms
Peak R-F Grid Voltage	305 320	volts
D-C Plate Current	150 150	ma.
D-C Screen Current	75 75	ma.
D-C Grid Current	45 45	approx.ma.
Driving Power	15 15	approx.watts
Power Output	125 155	approx.watts

## Preferably from unmodulated plate-voltage supply through resistor.

▲ obtained from grid resistor of value shown, or by partial self-bias methods.

**R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy***Pentode Connection**Key-down conditions per tube without modulation §*

D-C Plate Voltage	2000 max.	volts
D-C Suppressor Voltage (Grid #3)	500 max.	volts

§ See next page.

← Indicates a change.

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# R-F POWER AMPLIFIER PENTODE

(continued from preceding page)

D-C Screen Voltage (Grid #2)	600 max.	volts
D-C Grid Voltage (Grid #1)	-500 max.	volts
D-C Plate Current	175 max.	ma.
D-C Grid Current	50 max.	ma.
Plate Input	350 max.	watts
Suppressor Input	10 max.	watts
Screen Input	30 max.	watts
Plate Dissipation	125 max.	watts

## Typical Operation:

D-C Plate Voltage	1250	1500	2000	volts
D-C Suppressor Voltage	40	40	40	volts
D-C Screen Voltage ♦	500	500	500	volts
D-C Grid Voltage ■	-90	-90	-90	volts
	415	415	415	ohms
	7500	7500	7500	ohms
Peak R-F Grid Voltage	175	175	175	volts
D-C Plate Current	160	160	160	ma.
D-C Screen Current	45	45	45	ma.
D-C Grid Current	12	12	12	approx.ma.
Driving Power	2	2	2	approx.watts
Power Output	130	160	210	approx.watts

■ obtained from fixed supply, cathode resistor (#15), by grid resistor (7500), or by combination methods.

## R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

*Tetrode Connection - Grids #2 & #3 tied together*

*Key-down conditions per tube without modulation §*

D-C Plate Voltage	2000 max.	volts
D-C Screen Voltage (Grids #2 & #3)	600 max.	volts
D-C Grid Voltage (Grid #1)	-500 max.	volts
D-C Plate Current	175 max.	ma.
D-C Grid Current	50 max.	ma.
Plate Input	350 max.	watts
Screen Input	30 max.	watts
Plate Dissipation	125 max.	watts

## Typical Operation:

D-C Plate Voltage	1250	1500	2000	volts
D-C Screen Voltage ♦	150	150	150	volts
D-C Grid Voltage* §	-90	-90	-90	volts
	445	445	445	ohms
	3500	3500	3500	ohms
Peak R-F Grid Voltage	190	190	190	volts
D-C Plate Current	160	160	160	ma.
D-C Screen Current	15	15	15	ma.
D-C Grid Current	28	27	26	approx.ma.
Driving Power	4.6	4.4	4.4	approx.watts
Power Output	130	160	210	approx.watts

♦ use of series resistor is not recommended.

\* obtained from fixed supply, cathode resistor (#45), by grid resistor (3500), or by combination methods.

← Indicates a change. §, \*\*: See next page.



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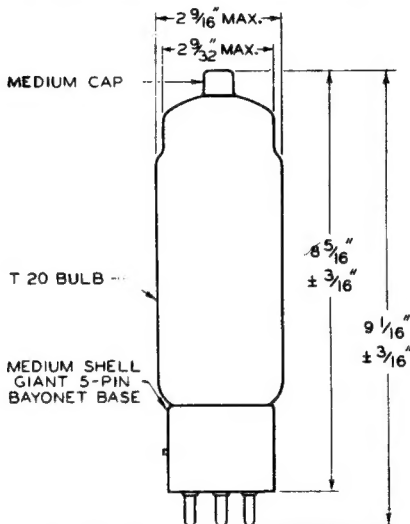
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**R-F POWER AMPLIFIER PENTODE**

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- § Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier condition.
- \*\* Preferably obtained from a separate source, or from the plate-voltage supply with a voltage divider.

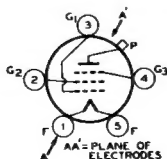
Data on operating frequencies for the 803 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

TUBE MOUNTING POSITION

VERTICAL: Base up or down.

92CM-4424R3

## BOTTOM VIEW OF SOCKET CONNECTIONS



Pin 1 - Filament  
 Pin 2 - Grid No. 2  
 Pin 3 - Grid No. 1  
 Pin 4 - Grid No. 3  
 Pin 5 - Filament  
 Cap - Plate

← Indicates a change.

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